

10/522996
522,996

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 February 2004 (19.02.2004)

PCT

(10) International Publication Number
WO 2004/014567 A1

(51) International Patent Classification⁷: **B05B 11/00**

(21) International Application Number:
PCT/EP2003/008647

(22) International Filing Date: 4 August 2003 (04.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0218251.7 6 August 2002 (06.08.2002) GB
0229472.6 18 December 2002 (18.12.2002) GB

(71) Applicant (for all designated States except US): **GLAXO GROUP LIMITED** [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex UB6 0NN (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **BONNEY, Stanley, George** [GB/GB]; GlaxoSmithKline, Park Road, Ware, Hertfordshire SG12 0DP (GB).

(74) Agent: **RICE, Jason, Neale**; GlaxoSmithKline, Corporate Intellectual Property (CN925.1), 980 Great West Road, Brentford, Middlesex TW8 9GS (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

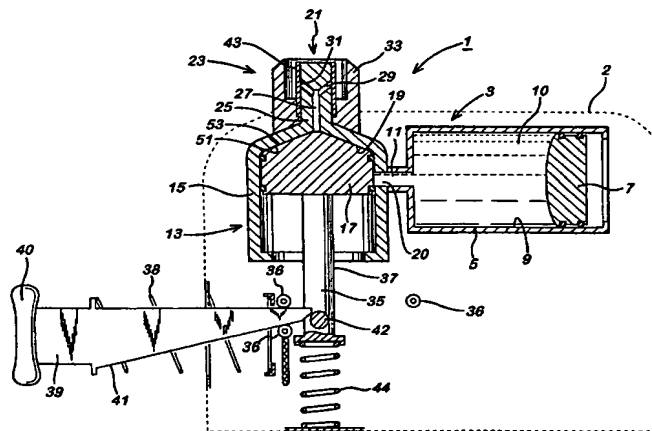
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A DISPENSER



(57) Abstract: A dispenser (1) for dispensing a metered volume of a fluid product (10) has a storage chamber (9) for storing the fluid product, an outlet orifice (21) through which the fluid product is dispensable from the dispenser and a metering chamber (19). The metering chamber has an outlet opening (27,31) which places the metering chamber in fluid communication with the outlet orifice, a transfer opening (20) through which the fluid product is transferable between the storage and metering chambers, and a boundary wall structure (15,17) which is cyclically movable between a first configuration, in which the transfer opening is opened, and a second configuration, in which the transfer opening is closed. Each cycle of movement which commences at, and ends in, the second configuration results in a metered volume of the fluid product being transferred from the storage chamber to the metering chamber via the transfer opening and dispensed from the outlet orifice via the outlet opening. The dispenser further has an actuation mechanism (35,38,39,44) actuable by a user of the dispenser to cause a cycle of movement of the boundary wall structure. The actuation mechanism is adapted so as to dispose the boundary wall structure in the second configuration at the end of each cycle of movement caused thereby.

BEST AVAILABLE COPY

WO 2004/014567 A1

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/08647

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B05B11/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 645 509 A (STEP SOC TECH PULVERISATION) 12 October 1990 (1990-10-12) the whole document	1-38
X	DE 100 17 438 A (KATZ OTTO) 11 October 2001 (2001-10-11) the whole document	1-4, 6-8, 10-25, 30-38
A		5, 9, 26-29

☐ Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

12 November 2003

Date of mailing of the international search report

28/11/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Barré, V

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/08647

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2645509	A	12-10-1990	FR 2645509 A1	12-10-1990
			AT 80850 T	15-10-1992
			CA 2005928 A1	20-06-1990
			DE 68902989 D1	29-10-1992
			DE 68902989 T2	15-04-1993
			EP 0378935 A1	25-07-1990
			JP 2246976 A	02-10-1990
			JP 2936485 B2	23-08-1999
			US 5024355 A	18-06-1991
DE 10017438	A	11-10-2001	DE 10017438 A1	11-10-2001